

What is claimed is:

1. A method for rapidly screening for diabetes, comprising the steps of:  
contacting a glucose-sensing ophthalmic device with an ocular fluid, wherein the glucose-sensing ophthalmic device comprises a testing agent composition which specifically and reversibly interacts with glucose to form a detectable signal which changes in a concentration-dependent manner;  
determining by means of the glucose-sensing ophthalmic device a first glucose concentration in the ocular fluid;  
administering orally a load of carbohydrate to the patient;  
at a period of time of less than 50 minutes after orally administering of the load of carbohydrate, determining by means of the glucose-sensing ophthalmic device a second glucose concentration in the ocular fluid; and  
comparing the second glucose concentration with the first glucose concentration to determine if the patient is likely to be a diabetic.
2. A method of claim 1, wherein the second glucose concentration is determined about 15 minutes after orally administering of the load of carbohydrate.
3. A method of claim 1, wherein said testing agent composition comprises a receptor that is capable of reversibly binding glucose and has a detectable optical signal that changes in a concentration-dependent manner when the receptor is reversibly bound to glucose, wherein said detectable optical signal results from one or more labels associated with the receptor.
4. A method of claim 3, wherein the detectable optical signal results from a pair of labels associated with the receptor, a first label and a second label, wherein one of the first and second label is a fluorescence energy donor and the other is a fluorescence energy acceptor or a non-fluorescence energy acceptor.
5. A method of claim 1, wherein said testing agent composition comprises a receptor having a first label associated therewith and a competitor having a second label associated therewith, wherein one of the first and second labels is a fluorescent energy donor and the other one is a fluorescent or non-fluorescent energy acceptor.
6. A method of claim 1, wherein said load of carbohydrate is at least 40 grams of carbohydrate.
7. A method for rapidly screening for diabetes, comprising the steps of:  
collecting a first tear fluid from a patient using a first tear-collecting device;

- assaying a specific amount of the first tear fluid to determine a first glucose concentration;
- administering orally a load of carbohydrate to the patient;
- collecting a second tear fluid, at a period of time of less than 50 minutes after orally administering of the load of carbohydrate, using a second tear-collecting device;
- assaying a specific amount of the second tear fluid to determine a second glucose concentration; and
- comparing the second glucose concentration with the first glucose concentration to determine if the patient is likely to be a diabetic.
8. A method of claim 7, wherein said first and second tear collecting devices are selected from the group consisting of capillary tubes, hydrogel strips, and contact lenses.
  9. A method of claim 7, wherein at least one of the first and second tear collecting devices is a strip having a first end and a second end, wherein said strip is made of a hydrogel material in substantially dry state and is characterized by having a substantially uniform swelling along the hydrogel strip from the first end to the second end when fully wicked by a tear fluid and by having a correlation between the volume of tear uptake by said strip and the length of a tear-wicked end portion of said strip.
  10. A method of claim 7, wherein said load of carbohydrate is at least 40 grams of carbohydrate.
  11. A method of claim 7, wherein said second tear fluid is collected at a period of time of at least 15 minutes after orally administering of the load of carbohydrate.
  12. A kit for rapid screening of diabetes, the kit comprising: a glucose-sensing ophthalmic device and instructions for using the glucose-sensing ophthalmic device to screen for diabetes, wherein the glucose-sensing ophthalmic device comprises a testing agent composition which specifically and reversibly interacts with glucose to form a detectable optical signal which changes in a concentration-dependent manner.
  13. A kit of claim 12, wherein said testing agent composition comprises a receptor that is capable of reversibly binding glucose and has a detectable optical signal that changes in a concentration-dependent manner when the receptor is reversibly bound to glucose, wherein said detectable optical signal results from one or more labels associated with the receptor.
  14. A kit of claim 13, wherein the detectable optical signal results from a pair of labels associated with the receptor, a first label and a second label, wherein one of the first and

second label is a fluorescence energy donor and the other is a fluorescence energy acceptor or a non-fluorescence energy acceptor.

15. A kit of claim 14, wherein said receptor is selected from the group consisting of GGBP, concanavalin A, inactivated glucose oxidase, inactivated glucose dehydrogenase, and boronic acid.
16. A kit of claim 14, wherein said fluorescent energy donor is selected from the group consisting of xanthene-type dyes, fluorescein-type dyes, rhodamine-type dyes, cyanine-type dyes, phycobiliproteins.
17. A kit of claim 12, wherein said testing agent composition comprises a receptor having a first label associated therewith and a competitor having a second label associated therewith, wherein one of the first and second labels is a fluorescent energy donor and the other one is a fluorescent or non-fluorescent energy acceptor.
18. A kit of claim 12, wherein the ophthalmic device can comprise a glucose-sensing LbL coating which is not covalently attached to the core material of the ophthalmic device, wherein the glucose-sensing LbL coating comprises the testing agent composition.
19. A kit of claim 18, wherein the glucose-sensing LbL coating comprises one or more layers of a vesicle with a charged surface and with a receptor or a competitor entrapped therein, wherein the receptor has a first label associated therewith and the competitor has a second label associated therewith, wherein one of the first and second labels is a fluorescent energy donor and the other one is a fluorescent or non-fluorescent energy acceptor.
20. A kit of claim 18, wherein the glucose-sensing LbL coating comprises one or more layers of a vesicle with a charged surface and with a receptor entrapped therein, wherein the receptor is capable of reversibly binding glucose and has a detectable optical signal that changes in a concentration-dependent manner when the receptor is reversibly bound to glucose, wherein said detectable optical signal results from one or more labels associated with the receptor.
21. A kit of claim 20, wherein the detectable optical signal results from a pair of labels associated with the receptor, a first label and a second label, wherein one of the first and second label is a fluorescence energy donor and the other is a fluorescence energy acceptor or a non-fluorescence energy acceptor.

22. A kit for rapid screening of diabetes, the kit comprising: two or more tear-collecting devices, and a testing agent composition which specifically reacts with glucose to form a detectable signal.
23. A kit of claim 22, wherein said two or more tear-collecting devices are selected from the group consisting of a hydrogel strip, a capillary tube, and a soft-hydrogel contact lens.
24. A kit of claim 23, wherein said two or more tear-collecting devices are hydrogel strips, wherein each of said strips has a first end and an opposite second end, wherein each of said strips is made of a hydrogel material in substantially dry state and is characterized by having a substantially uniform swelling along that hydrogel strip from the first end to the second end when fully wicked by a tear fluid and by having a correlation between the volume of tear uptake by that strip and the length of a tear-wicked end portion of that strip.
25. A kit of claim 24, wherein said hydrogel material is selected from the group consisting of poly(vinyl alcohol), modified polyvinylalcohol, poly(hydroxyethyl methacrylate), poly(vinyl pyrrolidone), poly(vinyl alcohol) with polycarboxylic acids, polyethylene glycol, polyacrylamide, polymethacrylamide, silicone-containing hydrogels, polyurethane, polyurea, and mixtures thereof.
26. A kit of claim 24, wherein said defined correlation between the volume of tear uptake and the length of the tear-wicked end portion is a substantially linear relationship.
27. A kit of claim 24, wherein each of said strips has noticeable marks thereon, wherein each of the marks indicates a volume of the tear fluid absorbed by the end portion up to that mark of that strip.
28. A kit of claim 22, wherein said testing agent composition comprises a receptor that is capable of reversibly binding glucose and has a detectable optical signal that changes in a concentration-dependent manner when the receptor is reversibly bound to glucose, wherein said detectable optical signal results from one or more labels associated with the receptor.
29. A kit of claim 28, wherein said testing agent composition comprises a receptor that is capable of reversibly binding glucose and has a detectable optical signal that changes in a concentration-dependent manner when the receptor is reversibly bound to glucose, wherein said detectable optical signal results from a pair of labels, a first label and a second label, associated with the receptor, wherein one of the first and second label is a

fluorescence energy donor and the other is a fluorescence energy acceptor or a non-fluorescence energy acceptor.

30. A kit of claim 22, wherein said testing agent composition comprises a receptor having a first label associated therewith and a competitor having a second label associated therewith, wherein one of the first and second labels is a fluorescent energy donor and the other one is a fluorescent or non-fluorescent energy acceptor.